IMPLEMENTATION OF CAREGIVER TRAINING TO DECREASE DEMENTIA-RELATED AGITATION IN LONG-TERM CARE FACILITIES

A DOCTOR OF NURSING PRACTICE PROJECT SUBMITTED TO THE OFFICE OF GRADUATE EDUCATION OF THE UNIVERSITY OF HAWAI`I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF NURSING PRACTICE

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Dedication

I dedicate this work in the memory of my late grandmother Sharon.

Abstract

Dementia is a substantial public health problem, and the incidence of dementia continues to rise. Dementia is frequently accompanied by increased levels of agitation and can have negative impacts on patients and their caregivers. Nonpharmacologic interventions have been identified as the first line treatment for dementia-related agitation. In collaboration with Hale Kū‘ike, an evidenced-based project was undertaken to utilize nonpharmacologic interventions to reduce dementia-related agitation in patients living in long-term care facilities.

Utilizing the Johns Hopkins Nursing Evidence-Based Practice Model as a framework, a caregiver training intervention was developed from ac review of the literature to supplement the organization’s current training protocols. The staff training intervention included six training modules for all nursing staff. Data was collected pre- and post-implementation. Results showed a decrease in patient dementia-related agitation levels, and an increase in staff engagement scores. These results aided the organization in the creation of new training policies and procedures.

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CHAPTER 1. EXECUTIVE SUMMARY

Introduction

Background and Problem

Dementia is a substantial public health problem that is expected to grow significantly (Hebert, Weuve, Scherr, & Evans, 2013). Up to 90% of people with dementia experience behavioral symptoms including increased levels of agitation (Jutkowitz et al., 2016). Dementia patients with a higher level of agitation require additional services and consultations that result in higher health care costs (Livingston et al., 2014). As the prevalence of dementia continues to grow, there is a need for solutions to control dementia-related costs.

Clinical practice guidelines suggest utilizing nonpharmacological interventions as the first line treatment for episodes of increased agitation in patients with dementia. However, little practical guidance is provided as to which nonpharmacological interventions should be utilized, and the evidence to support use is often limited.

Conceptual Framework

This Doctor of Nursing Practice (DNP) project utilized the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) to guide the change in practice. The JHNEBPM was chosen for this DNP project due to its detailed guidelines, which provide a process for formulating a practice question, appraising research and non-research evidence, and making recommendations for practice (Dearholt & Dang, 2012).

Literature Review and Synthesis

An electronic search was completed using PubMed, CINAHL, and Cochrane Data Bases. The literature identified various possible nonpharmacologic interventions to address dementia-

related agitation including sensory stimulation, caregiver training, activities and programing, and exercise.

Innovations and Objectives

Based on the needs of the organization and the feasibility of implementation, the practice change planned for Hale Kūʻike involved a caregiver training program. The objective of this program was to provide caregivers with a greater variety of skills to utilize in preventing and managing dementia-related agitation.

Methods

Design

An Evidence-Based Practice approach was utilized to implement this project. The project contributors determined that the level of evidence supporting a staff training intervention was strong and consistent, and the possible benefits of a staff training intervention at Hale Kūʻike outweighed potential risks.

Practice Change Description

For this project, all Hale Kūʻike staff members who provide direct nursing care were required to complete staff training modules over a period of three months. Training was completed in-person and was facilitated by a Hale Kūʻike staff member who is a Positive Approach to Care™ (PAC™) certified trainer.

Setting and Sample

Patient caregivers consisted of registered nurses (RNs) and certified nursing assistants (CNAs). Hale Kūʻike employs six RNs and 50 CNAs; three RNs and one CNA became PAC™ certified trainers, leaving three RNs and 49 CNAs that participated in the training modules. The patient population for this project was all patients living with dementia in Hale Kūʻike long-term

care facilities. The sample size when implementation began was 54 patients. Seven patients expired or transferred to another facility during the course of the implementation. The final sample size was 47 patients from two care facilities

Data Collection

Outcome and process evaluations were conducted for this project, measuring two outcomes for this intervention. A process evaluation was completed to track progression of the practice change and its implementation. Outcome evaluations were completed to examine the extent the project reduced patient agitation levels and how the project impacted caregiver work engagement. A T1, T2 design was used to implement both outcome evaluations.

Results

Description of Participants

The patient population was 47 patients living with dementia in Hale Kū‘ike’s long- term care facilities. Patient agitation levels were measured, using the short version of the Cohen-Mansfield Agitation Inventory (CMAI-S), pre- and post-implementation of a staff training program aimed at reducing levels of dementia-related agitation.

Staff members included in the training program consisted of three registered nurses and 49 certified nursing assistants. Staff participation was measured as complete or incomplete based on the completion of all training modules. Staff engagement was also measured pre- and post-implementation using the Utrecht Work Engagement Scale (UWES-9).

Data Analyses Findings

The facilities pre-implementation mean CMAI-S was 28.28; the combined post-implementation mean CMAI-S was 22.21, a mean decrease in patient agitation levels of 6.07 points. Staff participation in the training program was 92.45%. The facilities pre-implementation

mean UWES-9 score was 44.53; the combined post-implementation mean UWES-9 score was 47.29, a mean increase of 2.76 points.

Discussion

Interpretation of Results

The results of this project indicate that evidence-based staff training programs are an effective tool for long-term care facilities that are interested in implementing nonpharmacologic interventions to decrease patient levels of dementia-related agitation. Since this was a quality improvement evidenced-based project, without experimental design and randomization, the outcome measures are reported as changes in mean scores. Patient dementia-related agitation levels decreased, and staff engagement scores increased.

Implications

This evidence-based project highlights the benefits of implementing practice changes that have a strong scientific foundation. By integrating scientific principles and research-based knowledge with patient care, nursing practice can continue to meet the needs of the changing healthcare landscape

Limitations

Limitations to this evidence-based project included implementation in a fluid environment and a lack of variable control. Additionally, the limited sample of patients may not be representative of the general population living with dementia. Other limitations to this project involved the process of data collection and analysis. The data was collected over a limited period and may not be representative of other time periods.

CHAPTER 2. PROBLEM

Introduction

Dementia is frequently accompanied by increased levels of agitation which can increase strain on patients and their caregivers (Cohen-Mansfield & Mintzer, 2005). Dementia-related agitation affects one in five nursing home residents, with nearly half of all nursing home residents experiencing a period of agitation in their lifetime (Morely, 2011). Nonpharmacological interventions are identified as the first line treatment of agitation, and physicians rate prescribing pharmaceuticals as the least important aspect of care for agitated patients (Morely, 2011). However, the available clinical guidelines offer little guidance regarding the selection and implementation of nonpharmacological interventions. This chapter describes the process used to review and synthesize the available literature regarding nonpharmacological interventions for dementia-related agitation in a long-term care setting and reviews the evidence-based strategies that will be implemented in this project.

Background and Problem

Extent of the Problem

Dementia is a substantial public health problem expected to continue to grow significantly over the next few decades (Hebert, Weuve, Scherr, & Evans, 2013). Currently, approximately 25 million people are living with dementia worldwide, and the worldwide prevalence of dementia is expected to increase to 80 - 110 million by 2040 (Sentell et al., 2014). The Alzheimer's Association (2016) estimates the number of Americans currently living with Alzheimer's to be 5.4 million. By 2050, the number of people living with Alzheimer's disease in the United States is projected to grow to 13.8 million due to the aging population in the United States (Hebert et al., 2013).

Table 1
Predicted number of people in the United States with Alzheimer's disease in millions. (Hebert et al., 2013).

Year	Total No.
2020	5.8
2030	8.4
2040	11.6
2050	13.8

Jutkowitz et al. (2016) estimate that up to 90% of people with dementia experience behavioral symptoms including increased levels of agitation. These behavioral symptoms occur more often in advanced disease stages (Jutkowitz et al., 2016). Dementia patients with a higher level of agitation require additional services and consultations that result in higher health care costs (Livingston et al., 2014). Livingston et al. (2014) found that a one-unit increase in a patient's Cohen Mansfield Agitation Inventory score is associated with an increase in healthcare costs of $599 over a 6-month period. As the prevalence of dementia continues to grow, it is evident that there is a need for solutions to control dementia-related costs.

Baseline Data

This evidence-based project was implemented at Hale Kū'ike. The organization consists of two adult residential care homes located in Hawai'i (Facility A and Facility B). At the start of this project, the facilities cared for 54 long-term care patients; Facility A consisted of 26 patients, and Facility B consisted of 28 patients. The male to female ratio was 4:50. All patients had a diagnosis of dementia. Seven patients expired or transferred to another facility during the course of the implementation. The final sample size was 47 patients from two care facilities; Facility A consisted of 22 patients, and Facility B consisted of 25 patients, with a male to female ratio of 3:44.

Patient caregivers consisted of registered nurses (RNs) and certified nursing assistants (CNAs). Hale Kūʻike employs six RNs and 50 CNAs; three RNs and one CNA became certified in the training methods, leaving three RNs and 49 CNAs that participated in the training modules.

Triggers

The problem-focused triggers for this project were: a) a high recorded number of falls in residents with frequent increases in agitation; b) a high amount of staff hours spent with residents with increased agitation; and c) patients with increased levels of agitation requiring more frequent provider visits.

The knowledge-focused triggers for this project were: a) management's goal to follow current practice guidelines for the management of dementia related behaviors; and b) management's goal to decrease facility wide use of pharmacological interventions for agitation.

Conceptual Framework

This Doctor of Nursing Practice (DNP) project utilized the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM; see Figure 1) to guide the change in practice. The center of the model depicts current evidence which informs practice, education, and research. The JHNEBPM also identifies internal and external factors that have an influence on practice, education, and research, such as legislation, standards, and environment (Dearholt & Dang, 2012). The JHNEBPM was chosen for this DNP project due to its detailed guidelines, which provide a process for formulating a practice question, appraising research and non-research evidence, and making recommendations for practice (Dearholt & Dang, 2012).

Figure 1. The Johns Hopkins Nursing Evidence-Based Practice Model (Dearholt & Dang, 2012)

Literature Review and Synthesis

Clinical practice guidelines suggest nonpharmacological interventions as the first line treatment for episodes of increased agitation in patients with dementia. However, little guidance is provided as to which nonpharmacological interventions should be utilized and implemented, and the evidence to support use is often limited. A literature review was performed to determine the effect of nonpharmacological interventions on the level of agitation in patients with dementia in the long-term care setting.

An electronic search was completed using PubMed, CINAHL, and Cochrane Data Bases. Search terms included “dementia,” “Alzheimer’s,” Alzheimer’s Dementia,” “psychomotor agitation,” “agitation,” “long-term care,” “residential care,” “nursing homes,” “LTC,” “residential facilities,” “physical therapy,” “exercise,” “physical therapy,” “therapy,” “rehabilitation,” “physical activity,” “movement therapy,” “physical fitness,” “recreation therapy,” “aroma therapy,” “occupational therapy,” “music therapy,” “sound therapy,” “staff development,” “staff training,” “caregiver training,” “training,” “inservice training,” and “education.” A total of 149 English language articles from were identified during the electronic search.

Nonpharmacologic Interventions Identified

The literature search identified a variety of possible nonpharmacologic interventions (see Table 2). Seventy-five of the articles discussed sensory interventions including a variety of interventions such as music, aroma, and touch therapy. Seventeen of the articles discussed various methods of caregiver training. Fourteen of the articles discussed interventions related to activities and programing, and nine of the articles discussed exercise interventions. The remaining 34 articles discussed a variety of interventions including behavior management, robot-assisted therapy, antipsychotic review, pain management, and animal-assisted therapy.

Table 2
Interventions identified in literature

Intervention	Number of Articles
Sensory	75
Caregiver Training	17
Activities/Programing	14
Exercise	9
Other	34

Needs of the Organization

Hale Kū‘ike’s administration reviewed the interventions identified in the literature, and chose to focus the efforts of this project on a caregiver training intervention. This decision was made taking into account the interventions already offered at the organization, and the feasibility of implementing the intervention within the organization. The organization currently utilizes music and aroma therapies, an extensive activities program, a daily exercise program, and animal- assisted therapy. The organization’s administration believes expanding the caregiver training program, with a focus of reducing levels of dementia related agitation, aligns with the organizations values, and will benefit the caregivers and the patients they care for.

Caregiver Training

The reference lists of the 17 articles discussing caregiver training were reviewed in order to identify additional relevant articles; 19 additional articles were identified for review. Articles were then screened for the following inclusion criteria:

1. English language.
2. Measurement of agitation levels.
3. Implementation in long-term care facilities.
4. Subjects with dementia.
5. Care giver training interventions.

A total of 24 articles met the inclusion criteria and were included in the critique. Mosby's Level of Evidence was used to grade the internal validity and level of evidence of each article. As noted in Table 3, this grading tool identifies seven levels of evidence to which articles are assigned (Mosby's Nursing Consult, 2009). This literature critique included five systematic reviews of randomized controlled trials, seventeen randomized controlled trials, one controlled trial without randomization, and one qualitative study (see Figure 2).

Table 3
Mosby's Level of Evidence (Mosby's Nursing Consult, 2009)

Level I	Systematic review of randomized controlled trials
Level II	At least one well-designed randomized control trial
Level III	Well-designed controlled trials without randomization
Level IV	Well-designed case-controlled or cohort studies
Level V	Systematic review of descriptive or qualitative studies
Level VI	Single descriptive or qualitative study
Level VII	Opinion authority or report from expert committees

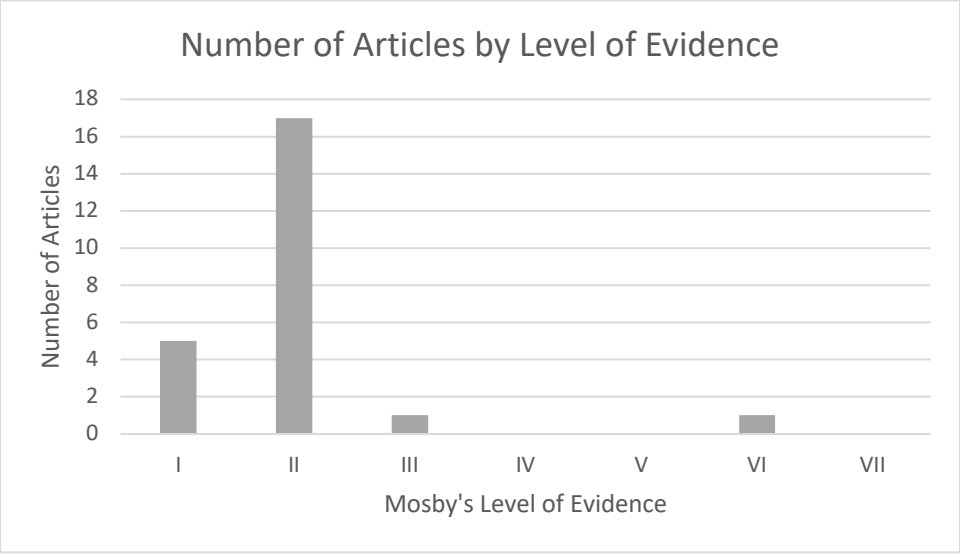

Figure 2. Number of Articles Reviewed by Level of Evidence

This literature review identified several caregiver training interventions that have been investigated for the treatment of dementia-related agitation in long-term care settings. Caregiver training interventions identified in the literature included training in dementia-care mapping, person-centered care, emotion-oriented care, protocols to reduce drug use, communication, and other training interventions.

Dementia-care mapping. Van de Ven et al. (2012) explains that dementia-care mapping is a method that utilizes systematic observations of actual care, in settings such as long-term care facilities, in order to create improved individualized care plans. Seven of the twenty-four articles reviewed for this project discussed training caregivers in dementia-care mapping, including three randomized controlled trials and four systematic reviews.

Two of the randomized controlled trials reported a reduction in agitation levels (Chenoweth et al., 2009; Rokstad et al., 2013). The remaining randomized controlled trial found no statistical significant change in agitation levels (Van de Ven et al, 2013). Three of the systematic reviews found that training staff in dementia-care mapping decreased symptomatic and severe agitation in care-home dementia residents (Abraha et al. 2017; Livingston et al.,

2014a; Livingston et al., 2014b). One systematic review found that the current evidence regarding training caregivers in dementia-care mapping is insufficient (Jutkowitz et al., 2016).

Person-centered care. Training in person-centered care places emphasis on quality of life as defined by the patient; this approach promotes active listening, sensitivity, empathy, acceptance, and caring (Brownie & Nancarrow, 2013). Eight of the articles reviewed for this project discussed training caregivers in person-centered care, including four randomized controlled trials and four systematic reviews.

Three of the randomized controlled trials reported a reduction in agitation levels (Chenoweth et al., 2009; Rokstad et al., 2013; Testad et al., 2016). The remaining randomized controlled trial found no change in agitation levels, however this study did show significant reduction in the use of neuroleptics (Fossey et a., 2006). Three of the systematic reviews found that training caregivers in person-centered care decreased symptomatic and severe agitation in care-home dementia residents (Abraha et al. 2017; Livingston et al., 2014a; Livingston et al., 2014b). One systematic review found that the current evidence regarding training caregivers in person-centered care is insufficient (Jutkowitz et al., 2016).

Emotion-oriented care. Training in emotion-oriented care provides the caregiver skills aimed at improving the emotional and social functioning of patients living with dementia (Finnema et al., 2005). Three of the articles reviewed for this project discussed training caregivers in emotion-oriented care, including two randomized controlled trials and one systematic review. The two randomized controlled trials both found no statistical significant changes in agitation levels (Finnema et al., 2005; Schrijnemaekers et al., 2002). Additionally, the systematic review found no trials that showed effects on agitation levels (Jutkowitz et al., 2016).

Protocols to reduce drug use. Four of the articles reviewed for this project discussed training caregivers in protocols to reduce the use of antipsychotic drug use, including three randomized controlled trials, and one systematic review. One of the randomized controlled trials showed a significant reduction in agitation levels, however, this study implemented additional interventions, such as activity therapy, in the same arm of the trial. Despite showing reductions in the use of antipsychotics in their randomized controlled trials, Fossey et al. (2006) and Meador, Taylor, Thapa, Fought, and Ray (1997) found no significant reduction in agitation. Additionally, the systematic review by Jutkowitz et al. (2016) found insufficient evidence to support caregiver training in drug use protocols to reduce dementia-related agitation.

Communication. Five of the articles reviewed discussed providing caregivers with communication skills training. In a randomized control trial, McCallion, Toseland, Lacey, and Banks (1999) found that educating caregivers to communicate more effectively showed a reduction in patient agitation levels. In a nonrandomized trial, Sprangers, Dijkstra, and Romijn-Luijten (2015) found no statistical significant change in agitation levels, however, they did find reductions in caregiver distress. Finally, three systematic reviews found that training caregivers in communication skills decreased symptomatic and severe agitation in care-home dementia residents (Abraha et al. 2017; Livingston et al., 2014a; Livingston et al., 2014b).

Other training interventions. Ten of the articles discussed various other caregiver training programs, including seven randomized controlled trials, one single descriptive study, and two systematic reviews. The interventions discussed included training in behavioral and psychological symptoms of dementia, nonverbal sensitivity, caregiver skill development, dignity and respect of dementia patients, optimizing physical activities and functional tasks, and multidisciplinary training interventions.

Five of the randomized controlled trials and the single descriptive study showed reductions in agitation scores (Burgio et al., 2002; Deudon et al., 2009; Pieper et al., 2016; Teri, Huda, Gibbons, Young, & Van Leynseele, 2005; Testad, Ballard, Brønnick, & Aarsland, 2010). The remaining two randomized controlled trials found no statistically significant changes in agitation levels (Galik, Resnick, Hammersla, & Brightwater, 2014; Magai, Cohen, & Gomberg, 2002). However, Galik et al., (2014) did find a decrease in adverse events such as falls, fall-related injuries, emergency department transfers, and deaths.

A systematic review by Seitz et al. (2012) found that there is some support in the literature for caregiver training and recommended additional research. Conversely, a systematic review by Jutkowitz et al. (2016) found no evidence of changes in agitation levels in this category of caregiver training interventions.

Training topics. Training topics were identified in the articles that found reductions in dementia-related agitation.

Dementia-care mapping. Dementia-care mapping training topics identified include:

- identifying factors related to resident wellbeing;
- identifying positive and negative care (Chenoweth et al., 2009; Rokstad et al., 2013).

Person-centered care. Person-centered care training topics identified include:

- understanding that behavior is a form of communication;
- recognizing that feelings persist despite cognitive impairment;
- acknowledging feelings during social interactions;
- identifying how residents express feelings and needs in order to individualize care;
- understanding how staff actions contribute to behaviors of residents;

- using social interactions to help to preserve personhood and build meaningful relationships (Chenoweth et al., 2009; Rokstad et al., 2013; Testad et al., 2016).

Protocols to reduce drug use. Protocols to reduce drug use training topics identified include:

- symptomatology and causes of behavioral symptoms in dementia;
- using standardized assessments;
- nonpharmacological and pharmacological interventions (Rapp et al., 2013).

Communication. Communication training topics identified include:

- knowledge of dementia and behavioral symptoms;
- verbal and non-verbal communication;
- using Memory aids (McCallion et al., 1999).

Other. Other training topics identified include:

- knowledge of dementia and behavioral and psychotic symptoms of dementia (BPSD);
- assessment skills that target unmet needs;
- skills in responding to individual instances of BPSD;
- staff behavior strategies to avoid or to decrease the emergence of BPSD;
- identifying factors in the environment that could affect resident behavior;
- hands-on training in behavioral skills on the unit;
- verbal and nonverbal skills for communicating;
- improving communication between staff and with families;
- introducing and maintaining pleasant events;
- identify and decreasing resident distress (Burgio et al., 2002; Deudon et al., 2009; Karel et al., 2016; Pieper et al., 2016; Teri et al., 2005; Testad et al., 2010).

Innovation and Objectives

After reviewing the available literature on caregiver training to reduce dementia-related agitation, the organization chose to move forward with a caregiver training intervention to be implemented in their long-term care facilities. After the training topics identified in the literature were reviewed for redundancy, a final list of topics was identified and incorporated into the training program including:

- knowledge of dementia and agitation;
- verbal and non-verbal communication;
- assessment skills that target unmet needs;
- identifying factors in the environment that could affect resident behavior;
- understanding that behavior is a form of communication;
- identifying how residents express feelings and needs in order to individualize care;
- staff behavior strategies to avoid or to decrease the emergence of agitation;
- skills in responding to individual instances of agitation; and
- hands-on training in behavioral skills on the unit.

Following the formation of the training program topic list, the team reviewed dementia caregiver training programs available in Hawaii. The organization had previously utilized portions of a dementia caregiver training program called the Positive Approach to Care™. Due to positive experiences utilizing these training methods in the past, the facility chose to explore the possibility of utilizing the Positive Approach to Care™ training methods in this evidenced-based project. The topics identified in the literature were compared with the topics covered in the Positive Approach to Care™ trainings. The team determined that the Positive Approach to Care™

trainings sufficiently addressed the topics identified in the literature and would be utilized in this evidenced-based project.

The team identified portions of the Positive Approach to Care™ training program that covered the topics identified in the literature review. It was determined that a total of three hours of the training program would need to be included in this project in order to address the necessary training topics. The organization's administration requested that the trainings be completed in 30-minute modules during staff shift changes in order to prevent the disruption of patient care.

For this intervention, all staff members who provided direct patient care were required to complete three hours of caregiver training focused on reducing dementia-related agitation. Trainings were held over a three-month period and delivered via six thirty-minute training modules.

Summary

A literature synthesis was completed to determine the most appropriate nonpharmacological interventions for the treatment of dementia-related agitation in patients in long-term care facilities. Due to the amount and quality of evidence, as well as the feasibility of implementation, a caregiver training practice change was chosen for implementation at Hale Kū'ike long-term care facilities. The practice change followed the Johns Hopkins Nursing Evidence-Based Practice Model. The caregiver training intervention included six training modules designed to reduce dementia-related agitation.

CHAPTER 3. METHODS

Objectives

This chapter outlines the implementation and evaluation plan of an evidence-based staff training program implemented at Hale Kū‘ike, a memory care home organization.

Design

The purpose of this DNP project was to implement an evidence-based caregiver training program to decrease dementia-related agitation in Hale Kū‘ike long term care facility patients. This project ultimately aims to enhance the quality of care provided. In order to complete this Evidenced-Based Project (EBP), a literature synthesis was completed to determine the most appropriate nonpharmacological interventions for the treatment of dementia-related agitation in patients in long-term care facilities. After reviewing the available literature, we concluded that the level of evidence supporting a caregiver training intervention was good and consistent. Utilizing the JHNEBPM translation pathways for EBP projects (see Figure 3; Dearholt & Dang, 2012), the team decided on a caregiver training intervention; we determined that while a broad application may require additional research, the possible benefits of a staff training intervention at Hale Kū`ike outweighed potential risks.

	Evidence			
	Compelling, consistent	*Good, consistent*	*Good, but conflicting*	*Insufficient/ absent*
Make recommended change?	Yes	Consider pilot of change	No	No
Need for further investigation?	No	Yes, particularly for broad application	Yes, consider periodic review for new evidence or development of research study	Yes, consider periodic review for new evidence or development of research study
Risk-benefit analysis	Benefit clearly outweighs risk	Benefit may outweigh risk	Benefit may or may not outweigh risk	Insufficient information to make determination

Figure 3. The JHNEBPM Translation Pathways for EBP Projects (Dearholt & Dang, 2012).

The Practice Change

Practice change. For this intervention, all staff members that provide direct patient care were required to complete a series of staff training events over the course of three months. Training was completed in-person and was facilitated by a Hale Kū‘ike employee who is a Positive Approach to Care™ (PAC™) certified trainer. Training topics included:

- knowledge of dementia and agitation
- verbal and non-verbal communication;
- assessment skills that target unmet needs;
- identifying factors in the environment that could affect resident behavior;
- understanding that behavior is a form of communication;
- identifying how residents express feelings and needs in order to individualize care;
- staff behavior strategies to avoid or to decrease the emergence of agitation;
- skills in responding to individual instances of agitation; and
- hands-on training in behavioral skills on the unit.

The facilities certified trainers also provided individualized trainings, evaluations, and feedback to aid in the further development of nursing staff skills.

Characteristics of innovation.

Relative advantage. Relative advantage is “the degree to which an innovation is perceived as better than the idea it supersedes” (Rogers, 2003, p. 10). Rogers (2003) further notes that economic profitability is often a factor of relative advantage. Possible savings for the organization involved the cost-effectiveness of the suggested nonpharmacological interventions for managing behavior. Livingston et al. (2014) found that training paid caregivers in person-

centered care or communication skills is one of the most cost-effective options for reducing agitation.

The organization may also benefit from the ability to promote its use of evidence-based care that may reduce the cost of healthcare for their patients. In analyzing the available data, Livingston et al. (2014) found that a one-unit increase in a patient's agitation score is associated with an increase in healthcare costs of $599 over a six-month period. Patients with a higher level of agitation require additional services and consultations that result in higher health care costs. If the organization can implement interventions that decrease the agitation scores of the patients, they may be able to significantly impact their patient's health care costs.

Compatibility. Compatibility refers to how the innovation is perceived to be in line with the existing values and needs of the organization (Rogers, 2003). The administration at Hale Kūʻike is focused on being the leading example for dementia care in Hawaiʻi. By implementing an evidenced-based project to decrease agitation, the facility is able to promote its efforts to provide the best possible care and environment for their patients. Additionally, the intervention was consistent with PAC™ themes that were previously introduced to the staff.

Complexity. Complexity refers to the degree to which practice change is viewed as difficult to understand and use (Rogers, 2003). The complexity of this project was low. The training topics were easy to understand and implement.

Trialability. Trialability refers to the ability to implement the practice change on a trial basis (Rogers, 2003). This caregiver training intervention could have been implemented on a trial basis in a single facility or with a small group of caregivers. However, Hale Kūʻike's administration chose to bypass the trial and implement the full scale project .

Observability. Observability is the degree to which stakeholders can see the results of the innovation (Rogers, 2003). This innovation had high observability as the results of the intervention were readily observed through patient agitation levels.

Implementation plan.

Who, what, where, when, why, how.

Six Hale Kūʻike staff members attended a two-day PAC™ trainer certification course and were trained to facilitate the implementation of the training modules. Training modules were implemented over a three-month period. Adjustments were made to the training modules and delivery of training based on caregiver and administration feedback.

The training modules were implemented monthly over a three-month period beginning in December 2017. Data was collected pre- and post-implementation. Data was analyzed and interpreted in February 2018, followed by a review and possible revision of the organization's training policies.

Sampling Plan

This section discusses the different users of the innovation and the various strategies utilized to promote the successful adoption of the innovation.

Social systems.

Health care organization. This EBP project was implemented at Hale Kūʻike, an organization that consists of two adult residential care home facilities located in Hawaiʻi.

Practice setting. Patient caregivers consisted of registered nurses (RNs) and certified nursing assistants (CNAs). Hale Kūʻike employs six RNs and 50 CNAs. The day to day operations of each location are managed by an administrator.

Sample. The patient population was all patients living with dementia in Hale Kū‘ike’s two long-term care facilities. All staff members who participated in the training program were RNs and CNAs.

Sample size. Fifty-four patients from two care facilities (Facility A and Facility B) initially participated upon implementation. Facility A consisted of 26 patients and Facility B consisted of 28 patients. The male to female ratio was 4:50. All patients were diagnosed with dementia. Seven patients expired or transferred to another facility during the course of the implementation. The final sample was 47 patients from two care facilities; Facility A consisted of 22 patients, and Facility B consisted of 25 patients, with a male to female ratio of 3:44.

Patient caregivers consisted of registered nurses (RNs) and certified nursing assistants (CNAs). Hale Kū‘ike employs six RNs and 50 CNAs; three RNs and one CNA became certified in the training methods, leaving three RNs and 49 CNAs that participated in the training modules.

Inclusion and exclusion criteria. Inclusion criteria for the target population were ARCH facility patients with a diagnosis of dementia, including all patients who resided in the facilities for the entire implementation period.

Application of users of the innovation. The implementation of an evidenced-based training program to reduce patient levels of agitation at Hale Kū‘ike, a long-term care facility, required buy-in from all staff members who provided direct patient care and the organizations management team, including administrative and nursing staff. To ensure the implementation of this innovation was successful, a team of individuals with the ability to influence their coworkers was assembled.

Stakeholder Engagement Plan

The CDC defines stakeholders as individuals or organizations that are invested in the program, the results of the evaluation, and/or the utilization of the evaluation results (Centers for Disease Control and Prevention [CDC], 2011; see table 4). Key stakeholders identified for this project include facility Administrators, the Directors of Nursing, and the DNP Student. These individuals were identified as key stakeholders due to their positions and influence in the organization.

Table 4.
Typical Stakeholders in Public Health (CDC, 2011).

Type of Stakeholder	Connection to Program
Those involved in program operations.	Management, program staff, partners, funding agencies, and coalition members.
Those served or affected by the program.	Patients or clients, advocacy groups, community members, and elected officials.
Those who are intended users of the evaluation findings.	Persons in a position to make decisions about the program, such as partners, funding agencies, coalition members, and the general public or taxpayers.

Recruitment and marketing plan. An organized effort was made to recruit support for the implementation of the practice change. Six staff members including key members of the organization's management team displayed their commitment by becoming PAC™-certified trainers. The author of this DNP project was also certified as a PAC™ trainer and facilitated the delivery of the training modules to encourage diffusion of the innovation.

Application of communication processes. Due to competing demands and issues such as staff turnover, interest in practice change projects often wane over time (Cullen & Adams, 2012). To maintain the interest of stakeholders and staff members, this project utilized a multifaceted communication approach by employing interpersonal and mass media.

Interpersonal. Interpersonal communication channels, such as one-on-one and team meetings, were utilized to promote implementation strategies including highlighting advantages, disseminating credible evidence, seeking input and feedback from team members, reporting progress and updates, personalizing messages to the team, and providing public recognition (Cullen & Adams, 2012).

Throughout the implementation, one-on-one meetings were held biweekly with the key stakeholders to address any project barriers and adapt the intervention as necessary. Shift change meetings were also utilized on occasion to reinforce and promote the intervention, address concerns, receive feedback, and provide recognition of successes among all team members.

Mass media. This project utilized media channels including email and posters. Email was utilized to provide monthly updates to key stakeholders and managers. Emails contained information including implementation progress and updates. The information provided in these emails allowed the stakeholders to monitor the project's progress and provide staff encouragement to improve participation. Posters were placed in staff break rooms to post sign up lists, advertise the training modules, and track staff participation. Together, the posters and emails allowed stakeholders and staff members to monitor the progression of the project implementation.

Evaluation Plan

This project used the CDC's framework for program evaluation to evaluate outcomes. This framework provides guidelines that allow the stakeholders to identify and decide among evaluation options and allow for the creation of a balanced evaluation (Milstein & Wetterhall, 2000).

Evaluation question. The evaluation question for this project is: Will an evidence-based caregiver training program decrease the average agitation score by four points in residents living with dementia at Hale Kū‘ike, two long-term memory care homes, over a three-month period?

Program description. The organization where this evidence-based project was implemented is comprised of two adult residential care home facilities with a total of 54 beds. The facilities specialize in memory care, serving patients with dementia. Each location has a nursing staff comprised of approximately 28 nursing staff members, including RNs and CNAs. The organization**'**s goal is to be the standard for memory care facilities in Hawai`i.

Prior to implementation, individual caregiver's abilities to identify symptoms and causes of agitation, factors in the environment that affect agitation, and appropriate interventions to address agitation varied based on experience and level of education. Additionally, staff members utilized different styles in approaching patients, communicating with patients, and responding to agitated patients. The lack of individualization in approaches to care also impacted the patients' experiences, agitation levels, and outcomes.

Previous training program. The organization's previous caregiver training protocols included two categories: new hire and continuing education. The previous new hire training consisted of eight-and-a-half hours of video in-service training, a day of training with the Director of Nursing (DON), and shadowing another staff member for each of the three shifts (day, evening, and night). The eight-and-a-half hours of video in-service training included four hours of dementia training and four-and-a-half hours of safety and procedure training (see table 5). Continuing education requirements consisted of twelve hours of training per year. Continuing education opportunities offered by the organization generally consisted of disease process and

nursing skills trainings. These trainings were offered in the form of a written article or short video followed by a written quiz.

Table 5.
Hale Kū'ike Current New Hire In-service Video Training. (Accepting the Challenge: Providing the Best Care for People with Dementia, 2003)

Training Video Topic	In-service Hours
	1 hour
Accepting the Challenge: Providing the Best Care for People with Dementia, Module 1: What is dementia? / Symptoms of Alzheimer's	
Accepting the Challenge: Providing the Best Care for People with Dementia, Module 2: Physical Approach / Communication Skills	1 hour
Accepting the Challenge: Providing the Best Care for People with Dementia, Module 3: Offering Assistance / Evaluating Cognitive Levels	1 hour
Accepting the Challenge: Providing the Best Care for People with Dementia, Module 4: Meaningful Days (Activities) / Problem Behavior	1 hour
Eden Alternative	0.5
Working with Service Dog Training	0.5
Fire Safety, Hazardous Chemicals, and Bloodborne Pathogens Training	1.5
Health Insurance Portability and Accountability Act of 1996 Training	0.5
Safety Training with PT	0.5

EBP changes to program. This project introduced a new staff training program that added to the previous training agenda by implementing curricula designed to reduce patient agitation levels. This new training was designed to help staff become more effective by offering them a greater variety of interventions to use with patients exhibiting agitation. The new training program, Positive Approach to Care™ (PAC™) Training, changed the previous practice in two ways. First, it built on the curriculum offered in the current new hire training videos. Second, it replaced three of the twelve continuing education requirements offered by the facility.

The skills offered in these six new modules were designed to increase the staff's skill level in addressing dementia-related agitation, allowing them to identify increased levels of agitation, understand environmental factors that influence agitation, and respond with appropriate techniques. Appropriately responding to and managing agitation levels may decrease the time spent responding to episodes of increased agitation, reducing stress and burnout. Patient benefits of a successful program may include lower levels of dementia-related agitation, resulting in a decrease in negative outcomes including injury, decreased health care costs, and increased quality of life.

Definitions.

Problem. The focus of this project was addressing increased agitation levels in dementia patients in long-term care facilities. The evaluation question was: Will an evidence-based staff training program decrease the average agitation score by four points in residents living with dementia at Hale Kūʻike, two long-term memory care homes, over a three-month period?

The expected decrease in agitation scores was based on results of available studies that utilized the Cohen-Mansfield Agitation Inventory (CMAI) to measure dementia-related patient agitation levels. Studies involving dementia-care mapping, person-centered care, and protocols to reduce drug use showed an average decrease of 11.5 points (10.9, 13.6, and 10.1) on the full version of the CMAI, which adjusts to a decrease of four points on the short form of the Cohen-Mansfield Agitation Inventory (CMAI-S) utilized in this project (Chenoweth et al., 2009; Rapp et al., 2013).

Intervention. The intervention was an evidence-based staff training program designed to reduce patient agitation levels. The training program utilized the Positive Approach to Care™ (PAC™) Training methods. The PAC™ Training modules that were utilized include variations of

(a) Seeing GEMS™ – More than just loss; (b) Normal and Not Normal Aging; and (c) Positive Physical Approach™. Each of the PAC™ Training modules included didactic and experiential learning. Training facilitators received instruction in the Adult Experiential Learning Cycle (five step learning cycle) and various learning styles (visual, auditory, kinesthetic) during the training certification.

The PAC™ Training modules were offered in six thirty-minute training sessions held over a three-month period. The modules addressed the evidenced-based topics identified in the literature review including:

- knowledge of dementia and agitation
- verbal and non-verbal communication;
- assessment skills that target unmet needs;
- identifying factors in the environment that could affect resident behavior;
- understanding that behavior is a form of communication;
- identifying how residents express feelings and needs in order to individualize care;
- staff behavior strategies to avoid or to decrease the emergence of agitation;
- skills in responding to individual instances of agitation;
- hands-on training in behavioral skills on the unit.

Outcome and process evaluations were implemented. This evaluation measured two outcomes related to the intervention. A process evaluation was completed to monitor implementation of the practice change, i.e., ensuring the training program is fully implemented. An outcome evaluation was completed to examine the extent the project reduced patient agitation levels. An additional outcome evaluation was completed to describe caregiver work engagement changes.

Baseline/comparison. A T1, T2 design was used to implement both outcome evaluations.

Outcome evaluation – patient agitation. The first outcome evaluation was patient agitation. The definition used in this evaluation to define patient agitation was restlessness manifested verbally and physically as a symptom of dementia. The operational definition of patient agitation was measured through use of the short version of the Cohen-Mansfield Agitation Inventory (CMAI-S; see Appendix A), a reliable and validated assessment tool (Werner, Cohen-Mansfield, Koroknay, & Braun, 1994). Baseline agitation levels were defined as CMAI-S scores collected prior to implementation.

Outcome evaluation - staff engagement. The second outcome evaluation measured staff engagement. The definition used in this evaluation to define work engagement was the caregiver's sense of energetic and effective connection with their work activities, and their ability to manage the demands of their job (Schaufeli & Bakker, 2004). The operational definition of staff engagement was measured through use of the short Dutch version of the Utrecht Work Engagement Scale (UWES-9; see Appendix B). Baseline staff engagement levels were defined as UWES-9 scores collected prior to the training program implementation.

Process evaluation. To evaluate the implementation of the practice change, this project also used process evaluation to ensure the project was fully implemented. A process evaluation measures adherence to a procedure. The outcome for this process evaluation was measured by evidence of staff attendance in the training program. Staff attendance was measured as attendance at all (100%) training modules.

Discussion. The implementation of this project allowed the organization the opportunity to implement training policies and protocols aimed at reducing patient agitation levels. Utilizing both process and outcome evaluations provided the opportunity to measure staff compliance and

program effectiveness. The involvement of key stakeholders throughout the development of the evaluation methods ensured the project was implemented effectively and provided meaningful information to the stakeholders.

Data Management Plan

This section of the project proposal outlines the data management plan including data sources utilized, collection procedures, and the analysis plan. It is important that evaluations produce results that are reliable, valid, and informative (CDC, 2011). Additionally, organizations often have preferences and protocols regarding acceptable ways to collect information. It is important that data collection methods align with the values of the organization and protect patient and provider confidentiality (CDC, 2011).

Instrumentation.

Outcome evaluation – patient agitation. The CMAI-S was used to collect data on patient agitation levels. The CMAI-S includes 14 data elements describing agitated behavior categories, each rated on a five-point scale (see appendix A; Werner, Cohen-Mansfield, Koroknay, & Braun, 1994). The CMAI was developed for use in the nursing home setting, which makes its use appropriate for this project (Cohen-Mansfield, 1991). Cohen-Mansfield (1991) notes that this assessment tool has been shown to be reliable and valid. She explains that, "for the short version of the CMAI, inter-rater reliability was as follows: exact agreement = .82; 0-1 point discrepancy = .93" (pg. 7).

Outcome evaluation - staff engagement. The Utrecht Work Engagement Scale (UWES-9) is the instrument that was used to collect data on Staff Engagement. The UWES-9 includes nine data elements, each rated on a seven-point scale (see Appendix B; Schaufeli & Bakker, 2004). Caregivers completed the UWES-9. The UWES-9 was be completed pre-and post-

implementation. The internal reliability and validity of the UWES-9 are acceptable for this project (Schaufeli & Bakker, 2004).

Process evaluation. The process evaluation involved one data source; training attendance. Training attendance was measured dichotomously as complete or incomplete. Attendance sheets tracked the extent caregivers completed all training modules. Individuals who did not complete the training, or only partially completed the training, were recorded as incomplete.

Data collection procedures.

Outcome evaluation – patient agitation. All CMAI-S data was collected by the facilities' DON, as they serve as the primary caregiver for each patient. Data was collected on paper copies of the CMAI-S and stored in the patient's medical charts. The DON reviewed the data collected and provided the results in aggregated form, without patient identification markers, to be stored electronically on a USB drive in a facilities management office locked drawer. Individual patient agitation levels were measured pre- and post-implementation.

Outcome evaluation - staff engagement. The UWES-9 will was completed by caregivers pre- and post-implementation. All data was collected on paper copies of the UWES-9 by the facilities administrator and secured in the administrator's office. The facility administrator reviewed the data and provided the results in aggregated form, de-identified, to be stored electronically on a USB drive in a facilities management office locked drawer.

Process evaluation. Training attendance was recorded by the module facilitator and overseen by the facility administrator. The facility administrator reviewed the data and provided the results, de-identified, to be stored on a USB drive in a facilities management office locked drawer.

Data analysis plan.

Outcome evaluation – patient agitation. Pre-and post- implementation CMAI-S data was analyzed using a means comparison of overall agitation levels within each facility and throughout the organization as a whole.

Outcome evaluation – staff engagement. Pre-and post- implementation UWES-9 data was analyzed using a means comparison of caregiver engagement levels within each facility and throughout the organization as a whole.

Process evaluation. Staff attendance was recorded and calculated as the percentage of staff members who completed all training modules.

Data presentation plan. Stakeholders were involved in the collection and analysis of data, allowing them to develop an understanding of how data elements are measured and the impact of the project on agitation levels. Data was presented and analyzed during a final stakeholder meeting, giving stakeholders the opportunity to participate in discussions regarding how the data collected can be utilized by the organization.

Fit with clinical question. The use of the CMAI-S directly addressed the evaluation question by measuring changes in patient agitation levels pre- and post-implementation. The process evaluation monitored the implementation of the practice change, i.e., ensuring the training program was fully implemented. Finally, the staff engagement surveys provided additional information regarding training benefits on caregiver work engagement.

Resources

This section of the project proposal outlines resources required to implement this evidence-based project. The resource categories identified include financial, human, time, and physical.

Financial

The financial resources necessary to implement this project included the cost of training facilitators, paying staff for time spent completing training modules, and office supplies for advertisement, communication, and data collection (see table 6). The organization committed to providing the funding necessary to the implementation of this project;

Table 6.
Financial Resources Required by Category

Category	Total Estimated Cost
Facilitator training	$8,000
Staff payment for time in training	$3,500
Office supplies	$100

Human

The necessary human resources included the management staff needed to plan, advertise, and implement the individual training modules. Regular meetings with key stakeholders ensured human resource needs were met.

Physical

The organization had adequate physical space and technology (i.e. computers, video recorders, and televisions) needed to complete this project.

Time

The required time resources included the time needed to plan, advertise, implement, evaluate, and analyze results of the training modules. The project was implemented over three

months, allowing two-week period for each of the training modules to be completed by all staff members.

Dissemination Plan

Marketing Plan to Disseminate Results

In addition to the interpersonal communication channels discussed above, mass communication methods such as email and fliers were utilized to market the project's outcomes. All staff members were made aware of the project's results through email and staff meetings, in order to reinforce the importance of the training program.

Plan for Sustainment of Practice Change

Following the dissemination of the results, the administrative staff reviewed and revised the organization's training procedures and protocols to ensure the sustainment of the practice change.

Role of stakeholders. Outcomes were presented to the core stakeholders during team meetings. As discussed previously, the stakeholders took part in the collection and analysis of the data and had a baseline understanding of the results prior to outcome discussions. The outcomes deemed most important by each core stakeholder were addressed individually. These outcomes include:

- use of results to promote facilities use of evidenced based practice and promote facilities ability to decrease levels of agitation;
- use of results to inform development of training policies and procedures;
- use of results to justify the expense of managers becoming certified trainers; and
- use of results to justify reinforcement of training procedures.

Human Subjects Considerations

This project was designed to protect the rights of all human subjects. The intervention is evidence-based, did not randomize patients into different treatment groups, and did not present any additional risk beyond standard practice. In order to protect the privacy of the patients, person-identified information was not collected. The ethical tenets of autonomy, non-maleficence, beneficence, and justice were considered for this project.

Autonomy

The organization's administration was involved throughout the development of this project. The practice change aligned with the mission and goals of the facility. The organization agreed to the project implementation and data collection. The implementation was also reviewed and adjusted throughout the implementation process to fit the needs of the organization.

Non-Maleficence

This project did not present any additional risk beyond standard practice. The project did not separate the patients into different treatment groups, and no person-identified information was collected.

Beneficence

This practice change had the potential to benefit the patients and the organization's caregivers. Patients may benefit from decreased agitation levels, which in turn may allow the caregivers to spend less time redirecting agitated patients and allow them to provide care in a more effective manner.

Justice

All patients and staff within the organization were able to benefit from the practice change. The practice change was made available to all the organization's staff members.

Justification to Exclude IRB process

This DNP project is a quality improvement program and did not require institutional review board approval.

Limitations

Limitations to this evidence-based project included implementation in a fluid environment and a lack of variable control. This project was implemented in two long-term care facilities, and the conditions present in the facilities were not constant throughout the implementation. The small size of the organization also presented limitations. The limited sample of patients may not be representative of the general population living with dementia. Other limitations to this project involved the process of data collection and analysis. The data was collected over a limited period and may not be representative of other time periods.

Summary

This chapter outlines the methods that were used in the implementation of an evidence-based caregiver training intervention to decrease agitation levels in long-term care facility dementia patients. The intervention was developed in collaboration with Hale Kūʻike and was implemented throughout their facilities. The practice change follows the Johns Hopkins Nursing Evidence-Based Practice Model due to its detailed guidelines. The staff training intervention included six training modules for all nursing staff. Six members of the organizations staff received certification in caregiver training methods. The trainings were delivered over a period of three months. Data was collected pre- and post-implementation and aided the organization in the creation of new training policies and procedures.

CHAPTER 4. RESULTS

Objectives

This chapter outlines the results of an evidence-based staff training program implemented at Hale Kūʻike, a memory care home organization.

Description of Sample

The patient population included 54 patients living with dementia in Hale Kūʻike's long-term care facilities. Patient agitation levels were measured using the short version of the Cohen-Mansfield Agitation Inventory (CMAI-S), pre- and post-implementation of a staff training program aimed at reducing levels of dementia-related agitation. The sample size when implementation began was 54 patients. Seven patients expired or transferred to another facility during the course of the implementation. The final sample size was 47 patients from two care facilities. Facility A consisted of 22 patients, and Facility B consisted of 25 patients. The male to female ratio was 3:44.

Staff members included in the training program consisted of registered nurses (RNs) and certified nursing assistants (CNAs). Hale Kūʻike employs 6 RNs and 50 CNAs. Three of the RNs and one CNA became certified in the training program delivered, leaving 3 RNs and 49 CNAs included in the training modules. Staff participation was measured as complete or incomplete based on the completion of all training modules. Staff engagement was measured pre- and post-implementation using the Utrecht Work Engagement Scale (UWES-9).

Trend Analysis for Process & Outcome Variables

Staff participation in the training program was 92.45% (Facility A: 96.15%, Facility B: 88.46%).

Prior to implementation, the mean CMAI-S scores at Facilities A and B were 33 and 24.12 respectively. One month after completing implementation of the project the mean CMAI-S score at Facility A was 24.23, a mean decrease of 8.77 (27%) (see Figure 4). The mean CMAI-S score at Facility B one month after the project implementation was 20.44, a mean decrease of 3.68 (15%) (see Figure 5). Combined the facilities pre-implementation mean CMAI-S was 28.28; the combined post-implementation mean CMAI-S was 22.21, a mean decrease of 6.07 (21%) (see Figure 6).

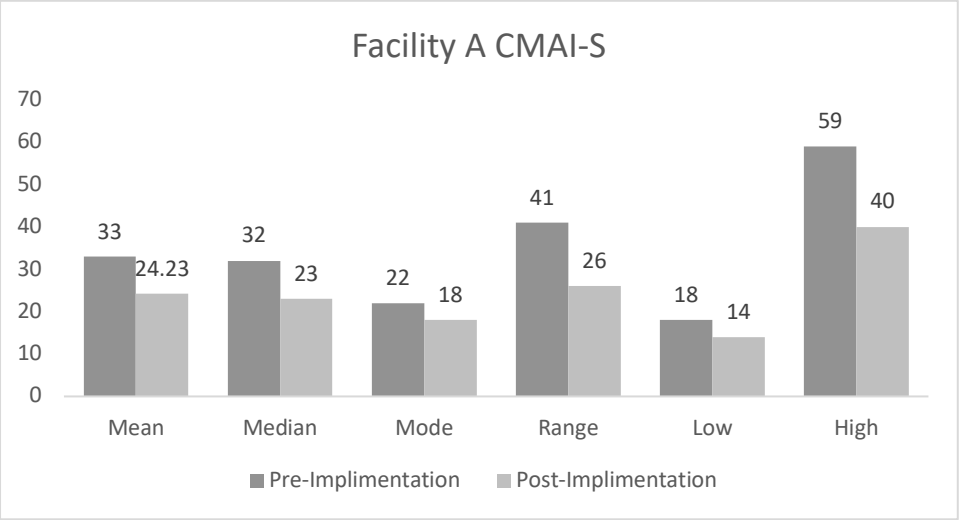

Figure 4. Facility A CMAI-S Scores Pre- and Post-Implementation.

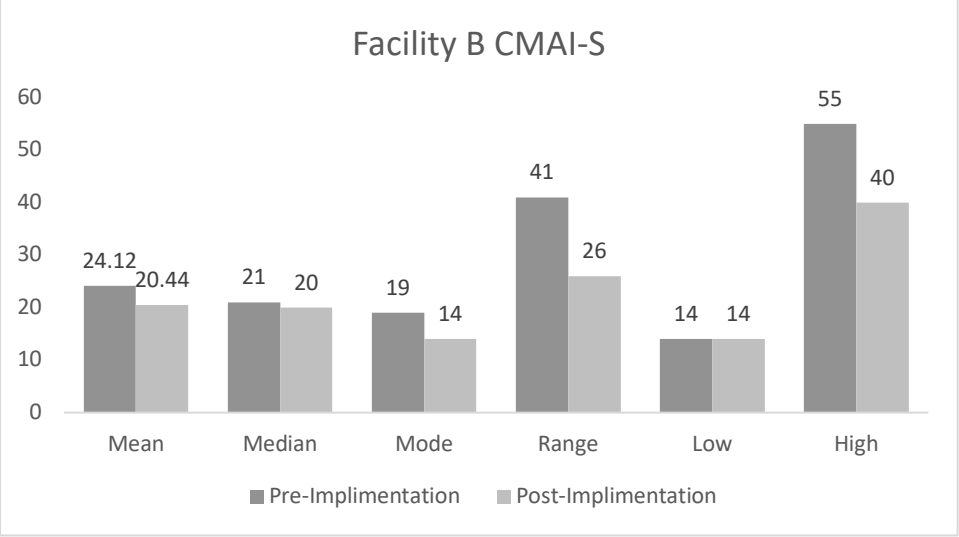

Figure 5. Facility B CMAI-S Scores Pre- and Post-Implementation.

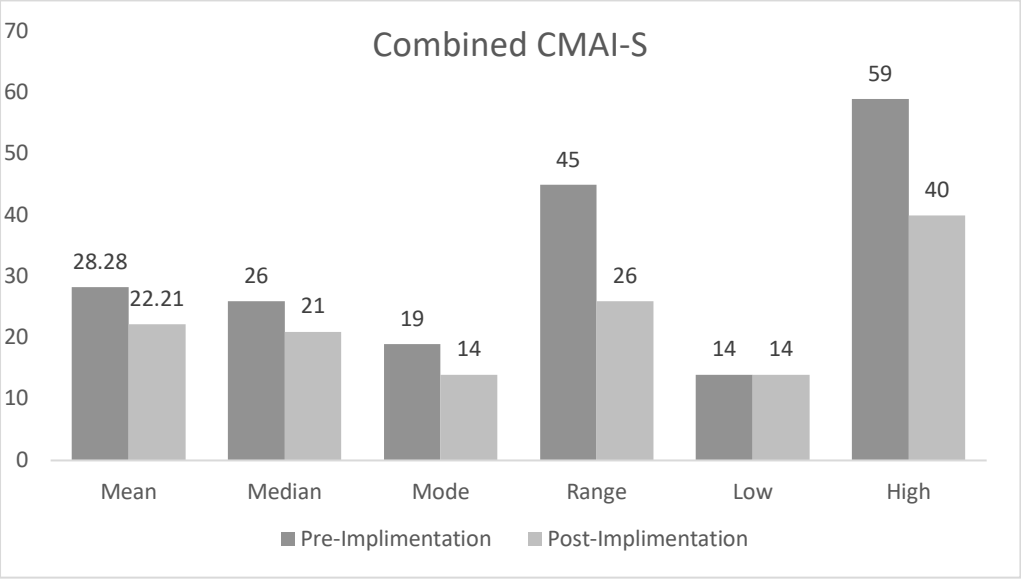

Figure 6. Combined CMAI-S Scores Pre- and Post-Implementation.

Completion of the UWES-9 pre- and post-implementation was optional for all caregivers. Prior to implementation, 40 caregivers completed the UWES-9 (Facility A: 21; Facility B: 19). Mean scores prior to implementation were 47.62 at Facility A and 41.11 at Facility B (combined mean score: 44.53). Following implementation, 24 caregivers completed the UWES-9 (Facility A: 12; Facility B: 12). Facility A had a mean UWES-9 score of 49 post-implementation, an increase of 1.38 points (see Figure 7). Facility B showed a mean increase of 4.47 on the UWES-9 with a mean post-implementation score of 45.58 (see Figure 8). Combined, Facilities A and B pre-implementation mean UWES-9 score was 44.53; the combined post-implementation mean UWES-9 score was 47.29, a total mean increase of 2.76 (See Figure 9).

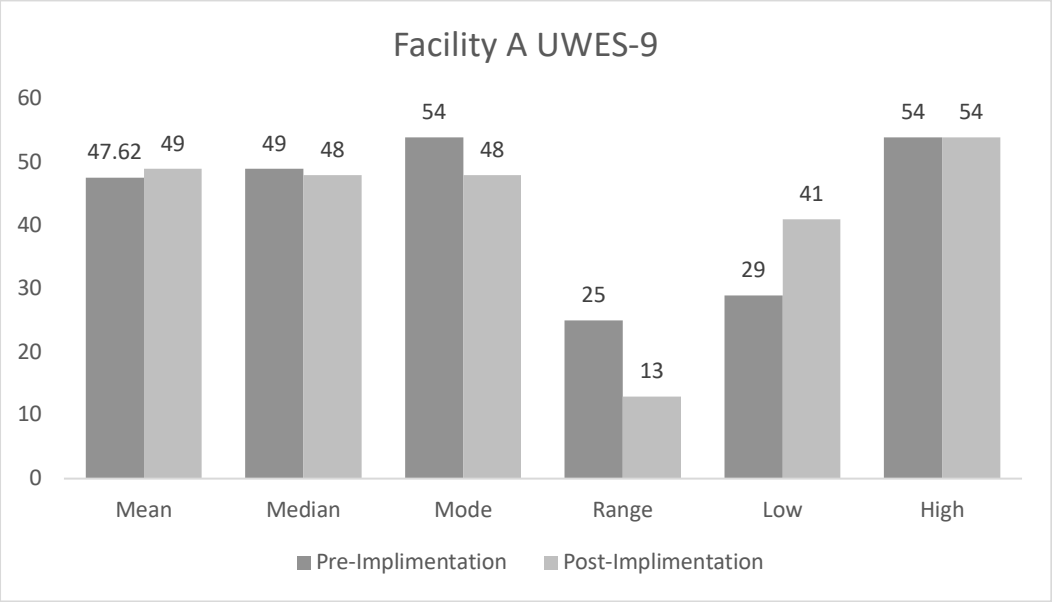

Figure 7. Facility A UWES-9 Scores Pre- and Post-Implementation.

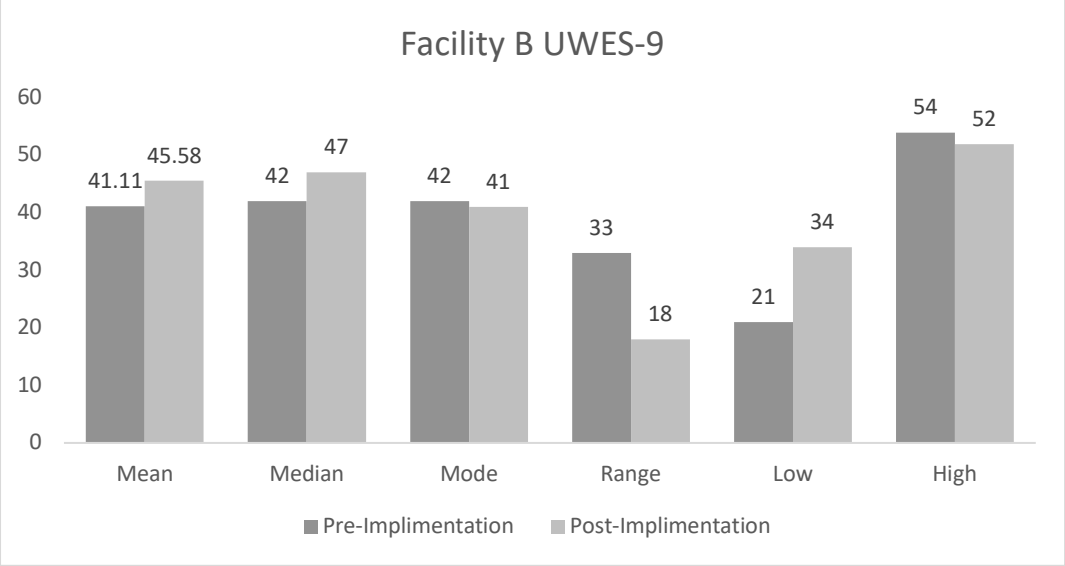

Figure 8. Facility B UWES-9 Scores Pre- and Post-Implementation.

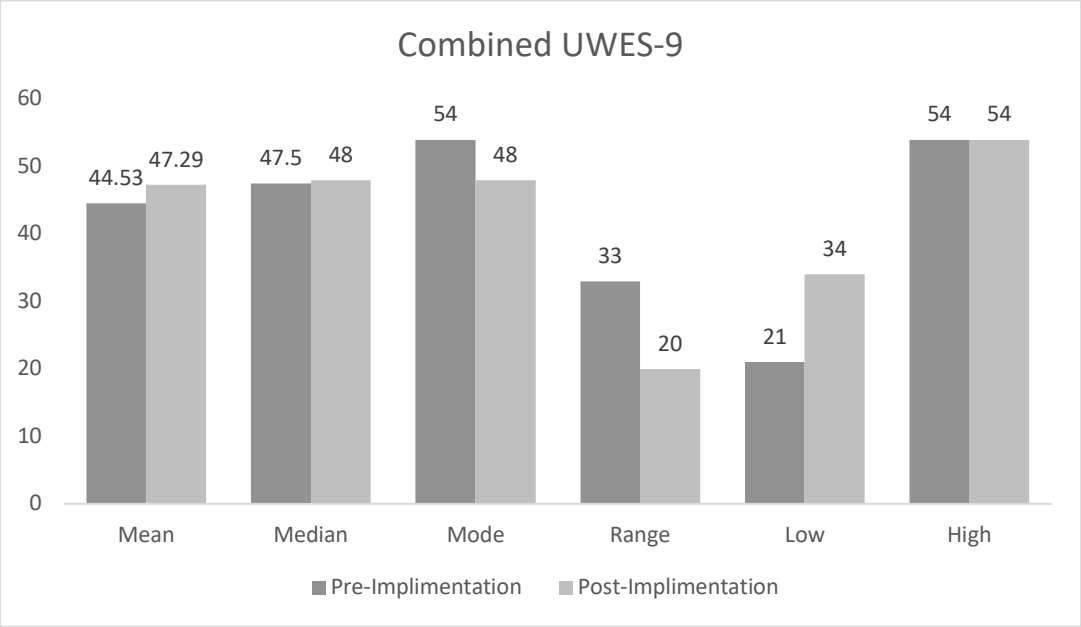

Figure 9. Combined UWES-9 Scores Pre- and Post-Implementation.

Evolution of Project

Expected vs. Actual Outcomes

The actual outcomes of this evidence-based project (EBP) exceeded the pre-implementation expected outcomes. The purpose of this EBP was to find an evidence-based intervention to reduce levels of dementia-related agitation in patients living in two long-term care facilities. The available literature showed that staff training interventions can be effective at reducing dementia-related agitation. This EBP resulted in a 6.07 (21%) point decrease in CMAI-S agitation scores, which was 2.07 points greater than the expected 4-point decrease.

This EBP also measured staff work engagement levels. Hale Kū‘ike management was interested in the impact of the caregiver trainings on staff engagement. An increase in staff engagement was expected because the trainings provided the staff members with additional caregiver tools. As expected, this EBP resulted in an increase in staff engagement.

Facilitators

Facilitators for this projected included the support from the facilities administration and the buy in from staff members. The facilities administration committed to providing funding and human and physical resources needed to complete this project. Staff members' eagerness to participate in the trainings was beneficial to the project.

Barriers

Providing trainings for evening and night shift staff was a barrier to the implementation of this project. Many of the CNAs who work the evening and night shifts had competing obligations during the day. To address this barrier, additional trainings were provided during night shifts.

Summary

An evidence-based staff training program aimed at reducing levels of dementia-related agitation was implemented at Hale Kū'ike, a memory care home organization. Patient agitation levels were measured pre- and post-implementation using the short version of the Cohen-Mansfield Agitation Inventory (CMAI-S). The sample size of patients from two care facilities was 47. Following the implementation of the staff training program the facilities saw a combined mean decrease of 6.07 (21%) points in patient agitation levels.

Staff members included in the training program consisted of all registered nurses and certified nursing assistants. 92.45% of patient caregivers participated in the training program. Staff engagement was measured pre- and post-implementation using the Utrecht Work Engagement Scale (UWES-9). Following the implementation of the staff training program, the facilities saw a mean increase of 2.76 points in staff engagement scores.

CHAPTER 5. DISCUSSION

Interpretation of Findings

The results of this project indicate that evidence-based staff training programs are an effective tool for long-term care facilities that are interested in implementing nonpharmacologic interventions to decrease patient levels of dementia-related agitation. Since this was a quality-improvement evidenced-based project, without experimental design and randomization, the outcome measures were reported as changes in mean scores. Results saw a decrease in patient dementia related agitation levels, and an increase in staff engagement scores.

Dementia-Related Agitation

Both facilities reported decreases in patient agitation scores. However, Facility A reported a greater decrease in agitation scores than Facility B (8.77 and 3.68 respectively). This may be due to Facility A reporting higher pre-implementation levels than Facility B (33 and 24.12 respectively). As this project did not include randomization or controls in its design, the decrease in agitation may also be related to other factors such as changes in medical management.

Staff Engagement

Both facilities reported increases in staff engagement scores. Facility B reported a mean increase of 4.47 points, and Facility A reported a mean increase of 1.38 points. Staff members from Facility A showed higher levels of pre-implementation staff engagement than staff from Facility B (47.62 and 41.11 respectively). The larger increase shown by Facility B may be due to the lower pre-implementation scores, allowing more room for improvement. It is also important to note that, despite showing a more significant increase in the mean score, Facility B's mean post-implementation score (45.58) was lower than Facility A's post-implementation score (49).

Training Methods and Means

In addition to the training topics discussed above, the methods used to deliver the trainings may have impacted the post-implementation patient agitation levels and staff work engagement scores. Trainings were delivered utilizing Positive Approach to Care™ training methods including didactic and experiential learning. All trainings were held in person and included scenario-based hands on learning experiences. Skills trainings were reinforced with hands on training with patients living with dementia

Flexibility in training times may have also impacted staff participation and engagement. In order to improve staff participation, trainings were offered during morning, afternoon, and evening work shifts. Additional trainings were added as needed to accommodate staff needs. The implementation of this project required multiple night shift trainings as many of the night and evening staff members have competing obligations during regular business hours.

Significance for Organization

The purpose of this evidence-based project was to implement a nonpharmacologic intervention to reduce dementia-related agitation levels in Hale Kū‘ike’s long-term care facilities. The results of this project provided the organization with information that will allow them to determine if the costs (financial, human, resources) needed to implement an evidence-based staff training program to reduce dementia-related agitation are justified by the benefits to the organization’s patients and staff members.

Future Recommendations

This project was implemented as a pilot program with a limited sample, and the evaluation was completed using univariate data analytical procedures. The results of this project

should be utilized to encourage broader implementation. In the future, as more data is available, e.g., larger sample sizes bivariate testing to determine whether increases were statistically significant will be used. Additional data could also be collected to examine other variables of interest, such as analyzing the impact of the training program on agitations scores between stages of dementia.

Implications for DNP Essentials

Essential I: Scientific Underpinnings for Practice

This evidence-based project highlights the benefits of implementing practice changes that have a strong scientific foundation. By integrating scientific principles and research-based knowledge with patient care, nursing practice can continue to meet the needs of the changing healthcare landscape.

Essential II: Organizational & Systems Leadership for QI & Economics

This evidence-based project provided the organization's leadership with information regarding the effectiveness of an intervention designed to reduce levels of dementia-related agitation in long-term care facility patients. The results of the project will allow the leadership team to evaluate the cost effectiveness of the program and make changes to the organization's policies and procedures.

Essential III: Evidence-Based Practice/Translation Science

This evidence-based project included a review of available literature to guide the implementation of a caregiver training program designed to reduce long-term care facility patient levels of dementia-related agitation. The results of this project emphasize the importance of using available evidence to shape nursing practice.

Essential IV: Information Systems/Technology

Utilizing information systems and technology is becoming increasingly important in the delivery of quality patient care. This evidence-base project accessed databases such as PubMed to review available literature; the literature review guided the development and implementation of this project. This project also utilized communication methods such as email to aid in the distribution of information.

Essential V: Health Care Policy & Ethics

As the number of individuals living with dementia continues to grow, it is important that health care policy and ethics address the needs of this expanding population. This project highlights the need for additional resources to care for individuals living with dementia. Many organizations do not have the resources to implement projects of this scale. Solutions need to be identified that allow quality healthcare to be delivered to all individuals living with dementia.

Essential VI: Inter-professional Collaboration

The success of this evidence-based project required the collaboration of an interdisciplinary team within the organization. The complexity of today's healthcare system requires interdisciplinary collaboration to provide quality care. This project highlights the benefits of implementing practice changes utilizing an interdisciplinary approach.

Essential VII: Prevention and Population Health

This evidence-based project emphasizes the value of preventative measures in improving population health. Preventative measures to reduce levels of dementia-related agitation can lead to decreased healthcare costs for this population (Livingston et al., 2014).

Essential VIII: Advanced Nursing Practice & Education

This evidence-based project was implemented by a Doctor of Nursing Practice (DNP) student with an Adult/Geriatric Nurse Practitioner specialty. This project required the DNP student to use clinical judgment, evidence-based standards, and therapeutic relationships to develop a staff training program aimed at reducing levels of dementia-related agitation in long-term care facility patients.

Plans for Dissemination

Results from this project will be reported in formats including oral presentations and written reports/publications. Oral presentations were provided to Hale Kū‘ike’s management team to aid the organization in reviewing and revising their training policies and procedures. Through publications this evidence-based project can be implemented in other long-term care facilities to improve the quality of care for individuals living with dementia. Additional written reports and oral presentations will be made available to interested parties upon request.

Summary

The implementation of an evidence-based staff training program to reduce levels of dementia related agitation in Hale Kū‘ike’s long term care facilities resulted in a decrease in patient agitation levels and an increase in staff engagement. The results of this project aided the facility in reviewing and revising their staff training protocols and improving the patient care provided by the organization.

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Appendix A

The Cohen-Mansfield Agitation Inventory - Short Form

	Never 1	Less than once a week 2	Once or several times a week 4	Once or several times a day 5	A few times an hour or continuous for half an hour or more 6
1. Cursing or verbal aggression	1	2	3	4	5
2. Hitting (including self), kicking, pushing, biting, scratching, aggressive spitting (include at meals)	1	2	3	4	5
3. Grabbing onto people, throwing things, tearing things, or destroying property.	1	2	3	4	5
4. Other aggressive behaviors or self-abuse including: Intentional falling, making verbal or physical sexual advances, eating/drinking/chewing inappropriate substances, hurting self or others.	1	2	3	4	5
5. Pacing, aimless wandering, trying to get to a different place (e.g. out of the room or building).	1	2	3	4	5
6. General restlessness, performing repetitions mannerisms, tapping, strange movements.	1	2	3	4	5
7. Inappropriate dress or disrobing.	1	2	3	4	5
8. Handling things inappropriately.	1	2	3	4	5
9. Constant request for attention or help.	1	2	3	4	5
10. Repetitive sentences, calls, questions or words.	1	2	3	4	5
11. Complaining, negativism, refusal to follow directions.	1	2	3	4	5

12. Strange noises (weird laughter or crying).	1	2	3	4	5
13. Hiding things, hording things.	1	2	3	4	5
14. Screaming	1	2	3	4	5

Please read each of the agitated behaviors, and check how often (from 1-5) they were manifested by the participant over the last 2 weeks; if more than one occurred within a group, add the occurrences, e.g., if hitting occurred on 3 days a week, and kicking occurred on 4 days a week, 3 + 4 = 7 days; circle 4, once or several times a day.

Appendix B

Work & Well-being Survey Shortened Version (UWES-9) ©

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

_____ At my work, I feel bursting with energy

_____ At my job, I feel strong and vigorous

_____ I am enthusiastic about my job

_____ My job inspires me

_____ When I get up in the morning, I feel like going to work

_____ I feel happy when I am working intensely

_____ I am proud on the work that I do

_____ I am immersed in my work

_____ I get carried away when I'm working